

CHAPTER 1. Reasoning and Proof

1. Basic Constructions, no exercises available
2. Patterns and Inductive Reasoning
3. Conditional Statements
4. Biconditionals and Definitions
5. Deductive Reasoning
6. Reasoning in Algebra or Geometry
7. Proving Angles Congruent

CHAPTER 2. Proving Theorems About Lines and Angles

1. Lines and Angles
2. Properties of Parallel Lines
3. Proving Lines Parallel
4. Parallel and Perpendicular Lines
5. Parallel Lines and Triangles
6. Constructing Parallel and Perpendicular Lines (no exercises available)

CHAPTER 3. Congruent Triangles

1. Congruent Figures
2. Triangle Congruence by SSS and SAS
3. Triangle Congruence by ASA and AAS
4. Using Corresponding Parts of Congruent Triangles
5. Isosceles and Equilateral Triangles
6. Congruence in Right Triangles
7. Congruence in Overlapping Triangles
8. Congruence Transformations

CHAPTER 4. Proving Theorems About Triangles

1. Midsegments of Triangles
2. Perpendicular and Angle Bisectors
3. Bisectors in Triangles
4. Medians and Altitudes
5. Indirect Proof
6. Inequalities in One Triangle
7. Inequalities in Two Triangles

CHAPTER 5. Proving Theorems About Quadrilaterals

1. The Polygon Angle-Sum Theorems
2. Properties of Parallelograms
3. Proving That a Quadrilateral Is a Parallelogram
4. Properties of Rhombuses, Rectangles, and Squares
5. Conditions for Rhombuses, Rectangles, and Squares
6. Trapezoids and Kites
7. Applying Coordinate Geometry
8. Proofs Using Coordinate Geometry

CHAPTER 6. Similarity

1. Ratios and Proportions
2. Similar Polygons
3. Proving Similar Triangles
4. Similarity in Right Triangles
5. Proportions in Triangles
6. Dilations
7. Similarity Transformations

CHAPTER 7. Right Triangles and Trigonometry

1. The Pythagorean Theorem and Its Converse
2. Special Right Triangles
3. Trigonometry
4. Angles of Elevation and Depression
5. Area of Regular Polygons

CHAPTER 8. Circles

1. Circles and Arcs
2. Areas of Circles and Sectors
3. Tangent Lines
4. Chords and Arcs
5. Inscribed Angles
6. Angle Measures and Segment Lengths

CHAPTER 9. Surface Area and Volume

1. Surface Areas of Prisms and Cylinders
2. Surface Areas of Pyramids and Cones
3. Volumes of Prisms and Cylinders
4. Volumes of Pyramids and Cones
5. Surface Areas and Volumes of Spheres

CHAPTER 10. Properties of Exponents and Rational Exponents

1. Multiplying Powers with the Same Base
2. More Multiplication Properties of Exponents
3. Division Properties of Exponents
4. Rational Exponents and Radicals

CHAPTER 11. Polynomials and Factoring

1. Adding and Subtracting Polynomials
2. Multiplying and Factoring
3. Multiplying Binomials.
4. Multiplying Special Cases
5. Factoring x^2+bx+c
6. Factoring ax^2+bx+c
7. Factoring Special Cases
8. Factoring by Grouping

CHAPTER 12. Quadratic Functions

1. Quadratic Graphs and Their Properties
2. Quadratic Functions
3. Modeling With Quadratic Functions
4. Solving Quadratic Equations
5. Factoring to Solve Quadratic Equations
6. Completing the Square
7. The Quadratic Formula and the Discriminant
8. Complex Numbers
9. Linear, Quadratic, and Exponential Models
10. Systems of Linear and Quadratic Equations
11. A New Look at Parabolas
12. Circles in the Coordinate Plane

CHAPTER 13. Probability

1. Experimental and Theoretical Probability
2. Probability Distributions and Frequency Tables
3. Permutations and Combinations
4. Compound Probability
5. Probability Models
6. Conditional Probability Formulas
7. Modeling Randomness

CHAPTER 14. Other Types of Functions

1. Properties of Exponential Functions
2. Graphing Radical Functions
3. Piecewise Functions
4. Combining Functions

CHAPTER 15. Sequences and Series

1. Mathematical Patterns
2. Arithmetic Sequences
3. Geometric Sequences
4. Arithmetic Series
5. Geometric Series